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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,121

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Kazuhiro Abe

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07/20/2009

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

QIAN, YUN

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,121	Applicant(s) ABE ET AL.	
	Examiner YUN QIAN	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) 25, 26 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 19-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/9/2006, 1/19/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Election/Restrictions

Applicant's election with traverse of Group I claims 1-14 and 19-24 in the reply filed on April 6, 2009 is acknowledged.

Applicants' arguments are not found persuasive because the inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features (and thus unity) for the following reasons: claim 1 is obvious over Tadanori, et al. (JP 09-207289), which teaches a film structure material and its manufacture (title, and abstract).

Accordingly, the special technical feature linking the inventions, such as a substrate made of glass fiber, fluorocarbon resin layers (PTFE), and fluororesin layers containing photocatalytic titanium oxide fine particles, does not provide a contribution over the prior art, and no single general inventive concept exists. Therefore, restriction is appropriate

The requirement is still deemed proper and is therefore made FINAL.

The claims 25-26 and 29 are withdrawn from consideration.

Claim Objections

Regarding claims 1 and 10, the abbreviations "PTFE, FEP, or PFA" are vague. They should not be used and should be replaced by an indication of what they are intended to cover. For the purposes of examination, the "PTFE, FEP, or PFA" in claims 1 and 10 are interpreted as "polytetrafluoroethylene (PTFE), copolymer of

tetrafluoroethylene-hexafluoropropylene (FEP), copolymer of tetrafluoroethylene-perfluoroalkylvinylether (PFA)".

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8 and 19-23 are rejected under 35 U.S.C.102 (b) as being anticipated by Domoto et al. (JP 09-207289).

Regarding claims 8, 19 and 21-23, Domoto et al. discloses a film structural material containing (1) fiber cloth and a silicone resin (applicant's substrate), (2) coating with fluorine resin PTFE (applicant's 1st layer), (3) coating with PTFE and glass beads (applicant's 2nd layer), (4) coating with the PTFE resin and photocatalyst titanium oxide fine particles (applicant's 3rd layer) ([Abstract] and [Solution]).

The weight ratio of photocatalyst and fluoro resin is in the preferably range of 3:7-5:5 ([MEANS]/ [0013]).

Since Domoto et al. teaches the same film structural material as the recited claims, the physical properties, such as water repellent and peeled off rate as per applicant claims 8, 19, and 21-23, would necessarily follow.

The final clause of claims 8, 19 and 21-23 are interpreted as intended use. Per MPEP 2111, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. Since the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 20, the photocatalysts taught by Domoto et al. are contained in the 2nd fluororesin layer as per applicant claim 20 (claim 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 9-14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Domoto et al. (JP 09-207289).as applied to claim 1 above, in view of Enomoto et al. (JP 2002-096434).

Regarding claims 1 and 9, Domoto et al. discloses a film structural material containing (1) a silicone resin coated glass fibers (applicant's substrate), (2) coating with fluorine resin (applicant's 1st layer), (3) coating with fluorine resin and glass beads (applicant's 2nd layer), (4) coating with the fluorine resin and photocatalyst titanium oxide fine particles (applicant's 3rd layer) ([Abstract] and [Solution]). The weight ratio of photocatalyst and fluoro-resin is in the preferably range of 3:7-5:5 ([MEANS]/ [0013]).

Although Domoto et al. teaches the use of the fluorine resin selected from polytetrafluoroethylene (PTFE), copolymer of tetrafluoroethylene-hexafluoropropylene (FEP), copolymer of tetrafluoroethylene-perfluoroalkylvinylether (PFA) ([MEANS]/[0013]), he does not specifically disclose exposing photocatalyst on FEP layer as per applicant claims 1 and 9.

Enomoto et al. teaches a composition of a toxic gas treatment sheet comprising a 1st layer containing a PTFE and photocatalyst particles (TiO₂), and a 2nd layer containing PTFE and FEP (a melting point lower than PTFE) ([Abstract] and [Solution]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Domoto et al. and Enomoto et al. to obtain the invention as specified in the claims 1 and 9, motivated by the fact that the mechanical strength of resulting sheet is improved ([ABSTRACT] and [DETAILED DESCRIPTION]/[0015]-[0016])

Since the combined reference (Domoto et al. and Enomoto et al.) teach the same film structural material as the recited claims, the physical properties, such as water repellent and peeled off rate as per applicant claim 8, are inherited.

The final clause of claims 1 and 9 are interpreted as intended use. Per MPEP 2111, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. Since the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 2, the substrate taught by Domoto et al. is fiber cloths which consist of glass fibers ([DETAILED DESCRIPTION]/ [0001]-[0002]).

Regarding claim 3, the photocatalysts taught by Domoto et al. are contained in the 2nd fluororesin layer as per applicant claim 3 (claim 9).

Regarding claims 4-6, although the combined references of Domoto et al. and Enomoto et al. does not specifically disclose the physical properties of the surface of the

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fluorocarbon resin layer, such as photooxidation and photoreduction abilities, contact angle of the surface, etc. as per applicant claims 4-6, since the prior art of records teach the same material as the recited claims, these physical properties of the material are inherited.

Regarding claims 7 and 24, the 1st and 2nd layers of the toxic gas treatment sheet taught by Enomoto et al have a thickness at least 50 micrometers respectively. The references differ from Applicant's recitations of claims by not disclosing identical ranges. However, the reference discloses "overlapping" ranges, and overlapping ranges have been held to establish prima facie obviousness (MPEP 2144.05).

Regarding claim 10, as discussed above, the film structural material taught by the combined references of Domoto et al. and Enomoto et al. comprises fiber cloths made of glass fiber substrate, and fluorocarbon resin layers made of PTFE and FEP as per applicant's claim 10 (claims 1-9, and [SOLUTION]).

Regarding claim 11, as discussed above, FEP taught by Enomoto et al. has a melting point lower than PTFE ([Abstract] and [Solution]). It meets the claimed limitations.

Regarding claim 12, as discussed above, the 2nd and 3rd fluoro-resin layers taught by Domoto et al. can be the same fluoro-resin material, such as PTFE ([SOLUTION]).

Regarding claims 13-14, as discussed above, the 1st and 2nd fluoro-resin layers taught by Domoto et al. can be the same fluoro-resin material, such as PTFE ([SOLUTION]). Therefore, the melting point of the 1st and 2nd layer is the same.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YUN QIAN whose telephone number is (571)270-5834. The examiner can normally be reached on Monday-Thursday, 10:00am -4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENZO/
Supervisory Patent Examiner, Art Unit 1793

/YUN QIAN/
Examiner, Art Unit 1793